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ABSTRACT

Sex stereotyping attitudes and behaviors of educators have been cited as particularly important influences on the development of gender differences in childhood and adolescence. Because teachers' attitudes, beliefs, and perceptions of gender differences may impact the formation of students' confidence in academic subjects and school in general, the perceptions that educators have of real or imagined gender differences can be used as one indicator of the conditions that may influence elementary and secondary school students. This study examined K-12 teachers' (155 females and 38 males) classifications of a list of characteristics as more typical of males or females in their classrooms. Characteristics were based on the Maccoby and Jacklin meta-analysis of gender difference research, so that teachers' responses could be compared with the findings of psychological research. In addition to evaluating the teachers' agreement with scientific evidence for gender differences, teachers' perceptions were examined in relation to teacher gender. It was found that some teacher perceptions of student gender differences agree with psychological research findings, some with myths, and some were even in favor of no sex differences when the research stated otherwise. It was also found that male and female teachers have different perceptions of the prevalence of some characteristics in boys and girls. Three tables present results and statistical analysis. (JBJ)

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Teachers' Perceptions of Gender Differences in Students

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(ABSTRACT)

Sex stereotyping attitudes and behaviors of educators have been cited as particularly important influences on the development of gender differences in childhood and adolescence. Because teachers' attitudes, beliefs, and perceptions of gender differences may impact the formation of students' confidence in academic subjects and school in general, the perceptions that educators have of real or imagined gender differences can be used as one indicator of the conditions that may influence elementary and secondary school students. This study examined teachers' (K-12) classifications of a list of characteristics as more typical of males or females in their classrooms. Characteristics were based on the Maccoby and Jacklin (1974) meta-analysis of gender difference research, so that teachers' responses could be compared with the findings of psychological research. In addition to evaluating the teachers' agreement with scientific evidence for gender differences, teachers' perceptions were examined in relation to teacher gender.

Teachers' Perceptions of Gender Differences in Students

For several decades, social scientists have examined the validity of many popular beliefs of gender differences which have become entrenched in Western societies. In a comprehensive meta-analysis of psychological research investigating gender differences, Maccoby and Jacklin (1974) demonstrated that studies showing no differences between males and females often outnumbered those that reported differences but that these null effects were frequently overlooked. Today, even highly educated people use the gender of an individual to form expectations of how that person should perform in educational and noneducational situations. Such sex stereotyping can often impact an individual negatively, particularly if these attitudes influence the individual's self appraisal at a time when he or she is first establishing confidence in a new area. Because teachers often play a fundamental role in the formation of children's and adolescents' confidence in academic subjects and school in general, the sex stereotyping attitudes and behaviors of educators are believed to be particularly influential sources of both correct and incorrect information regarding gender norms.

The purpose of this research was to examine gender stereotyping in primary and secondary school teachers who were employed in Central and Western Kansas. It was believed that the relatively traditional values of this state would make it an ideal choice for this study because students attending these schools would be at higher risk for gender biasing influences than those in areas that have less traditional views. Participants in this research were asked to use their experience as educators to score 32 characteristics on a 7-point scale, with one being representative of "Mostly Boys" and 7 being representative of "Mostly Girls." The 32 characteristics in this questionnaire were derived from Maccoby and Jacklin's (1974) meta-analysis, so that the teachers' beliefs ultimately could be compared to societal myths and actual research findings. The Maccoby and Jacklin meta-analysis was chosen as a basis for this study because no work of similar scope has been published since this compilation. In addition to evaluating the teachers' knowledge of scientific evidence for gender differences, teachers' beliefs were examined in relation to their own gender.

The findings of this research compliment, but do not duplicate, studies of teachers' differential behavior toward male and female students in the classroom. These results provide important information for individuals who work in educational settings, as well as for anyone who is interested in gender issues in general. This

study was designed to raise consciousness about potential gender stereotyping in primary and secondary schools and to foster discussion concerning how gender stereotyping may be impacting student outcomes.

Methods

Subjects

One-hundred-and-ninety-eight (155 female, 38 male) public school teachers (K-12) from four school districts in Central and Western Kansas were surveyed in this study. Teachers were contacted by the investigators or their research assistants. The majority of teachers were recruited from elementary schools (121), with fewer teachers from middle (33) and high schools (34) participating. Five teachers surveyed reported that their current job required them to teach a wide age range of students (8 or more grades). Participating teachers had been employed full-time for an average of 14.91 years ($SD = 10.03$) and were 41.45 years old ($SD = 9.28$) on average. One-hundred-and-five teachers had completed only a Bachelors degree, while 88 had completed a Masters or Ph.D.. The majority of teachers (163) had never participated in any kind of gender sensitivity training nor taken courses in Women's Studies or Gender Issues. The response rate of this study was approximately 30 percent which is considered comparable to other survey research.

Procedure

Teachers received a questionnaire packet from the investigators containing an introductory letter, informed consent form, and questionnaire with directions. The 40-item questionnaire consisted of 32 items about characteristics associated with gender and 8 demographic items. These packets were hand delivered and picked up by the investigators or their research assistants. When rating student attributes, teachers were asked specifically to base their ratings on their personal observations of students in their classroom(s). This portion of the questionnaire was structured so that teachers rated each descriptive word/phrase along a 7-point continuum in which 1 was designated "Mostly Boys" (display the characteristic) and 7 was designated "Mostly Girls" (display the characteristic). Informed consent forms were kept separate from the questionnaires so that anonymity of the teachers was insured.

Results

Teacher responses on each of the Student Characteristics Questionnaire items were aggregated. The means of these items represent teachers' perceptions of the prevalence of these qualities in their male and female students. Tables 1 and 2 compare teachers responses in this study to societal myths of gender differences and to the results of a meta-analysis of gender research on which this questionnaire was based (Maccoby & Jacklin, 1974). Teachers agreed with the meta-analysis that no gender differences existed in the following characteristics: visual learners, auditory learners, good memory fact memory, learn well by rote memorization, more influenced by biology, more influenced by environment, competitive, susceptible to peer pressure. Teachers agreed with the meta-analysis that girls were more likely to show the following characteristics: good verbal memory, good school performance, concern for physical appearance, fearful/timid, sensitive to social cues. Teachers agreed with the meta-analysis that boys were more likely to show the following characteristics: tend to show off, physically active, aggressive. To the extent that this study tests teachers' perceptions of gender differences in students against the findings of psychological research, we can interpret these agreements between the meta-analysis and teachers' responses as the teachers' "correct responses."

However, it is even more intriguing to look at the ways in which the teachers differed from the meta-analysis. Teachers agreed with the sex-typed myth on the following items: learn well by reasoning (boys), learn better when trying to please someone (girls), learn better when trying to obtain a reward (boys), more likely to copy an admired female (when the person is performing a gender neutral activity) (girls), more likely to copy an admired male (when the person is performing a gender neutral activity) (boys), more interested in people than objects (girls), more interested in objects than people (boys), impulsive (boys), and empathetic (girls). Additionally, teachers perceived girls as more likely to have advantages in verbal skills. This agreed, in part, with the meta-analysis which found that before age 3 and after age 11 girls do show such advantages, however, since most of the teachers taught in elementary schools, their agreement with this finding is puzzling.

It is interesting to note, that on some items teachers failed to differentiate the sexes so that their responses actually disagreed with gender difference that were documented by the meta-analysis. Specifically,

teachers favored no gender differences on the following characteristics which have shown advantages for one gender or the other in psychological research: spatial ability (boys), lack of confidence (girls), anxious (girls), helpful (girls), and concern about conforming to gender norms for his/her biological sex (boys). Additionally, the item, quantitative skills, was rated by teachers as having no advantages for either sex, when research shows advantages for males after age 11 (particularly in the gifted ranged).

In addition to comparing teachers' perceptions with myths and psychological research findings, a series of t -tests was used to examine differences between male and female teachers' responses. Table 3 summarizes the results of the tests that were significant or nearly significant. According to these findings, male teachers were more likely than female teachers to perceive girls as better able to remember facts, as more influenced by biology than environment, as having highly developed quantitative skills, and as more helpful. Male teachers were also more likely than female teachers to perceive boys as visual learners and as competitive. Mann-Whitney U Tests revealed similar results for these same male and female teacher comparisons.

Discussion

The findings of this study show that some teacher perceptions of student gender differences agree with psychological research findings, some with myths, and some were even in favor of no sex differences when the research stated otherwise. Despite the fact that teachers differed significantly from the neutral score (4 on a 7-point scale) on many items, it is also important to note that on most items they were very close to the neutral score even when a statistical difference was found. By simply looking at these scores, it is doubtful that the teachers in this study could be accused of sex stereotyping on the majority of items. Further, even if the teachers in this study do see boys and girls as "different," we do not know how these perceptions affect their behavior toward students. We can only suggest that beliefs in specific gender differences may underlie the differential treatment that studies of teacher-student interaction have documented.

The finding that male and female teachers have different perceptions of the prevalence of some characteristics in boys and girls is intriguing. Both seem to think the opposite sex student is likely to be more

affected by biology than environment. This result is interesting because it suggests that teachers may excuse opposite sex students more for sex-typed behavior, saying that they must be influenced by biology. Teachers also seemed to be more critical of same sex students. Compared to men teachers, women teachers perceived girls as having more difficulty remembering facts and poorer quantitative skills and as being less helpful. These perceptions raise some intriguing questions. For quantitative skills, could female teachers be reflecting their own perceived deficits in this area? In perceived helpfulness, could girls actually be more helpful to male teachers, or do female teachers emphasize boys helpful acts more? It is also interesting that men teachers perceived boys as far more competitive than girls, but women teachers perceived this trait as more evenly distributed across the sexes. Most research on teachers' differential treatment of students has studied female preschool or elementary school teachers, thereby making it difficult to discern whether male teachers, who are more likely to teach in the secondary grades, show similar biases. This study suggests that more research is needed to explore how male and female teachers differ in their treatment of students according to gender.

Table 1: Teacher Responses on Academic Items Compared to Common Myths and Maccoby and Jacklin's Findings of Gender Advantages

Item	Mean	Advantaged Gender (Present Study)	Advantaged Gender (Myth)	Advantaged Gender (M&J Findings)
Visual Learners	3.79	None	Boys	None
Auditory Learners	4.16	None	Girls	None
Good Verbal Memory	4.51*	Girls	Girls	Girls
Good Fact Memory	3.93	None	Girls	None
Learn Better by Rote Memorization	4.17	None	Girls	None
Learn Better by Reasoning	3.62*	Boys	Boys	None
Good Verbal Skills	4.81*	Girls	Girls	None/Girls**
Good Quantitative Skills	3.74	None	Boys	None/Boys**
Good Spatial Ability	3.80*	None	Boys	Boys
Good School Performance	4.49*	Girls	Girls	Girls

*Note. Teachers differed significantly from the central value of 4 on these items, as determined by a series of *t*-tests, $p < 0.05$.

**Note. These abilities showed sex differences at some ages but not at others. Girls show advantages in verbal skills prior to age 3 and after age 11. It should be noted that verbal skills in boys have shown improvement since the Maccoby and Jacklin meta-analysis was published, so that female advantages in this area are becoming less pronounced. Boys show advantages in quantitative skills only after age 11.

Table 2: Teacher Responses on Social/Personality Items Compared to Maccoby and Jacklin's (1974) Findings

Item	Mean	Advantaged Gender (Present Study)	Advantaged Gender (Myth)	Advantaged Gender (M&J Findings)
Learn Best When Trying to Please	4.90 [*]	Girls	Girls	None
Learn Best When Trying to Obtain Reward	3.38 [*]	Boys	Boys	None
Likely to Copy Admired Female	4.89 [*]	Girls	Girls	None
Likely to Copy Admired Male	3.01 [*]	Boys	Boys	None
Interested in People	5.10 [*]	Girls	Girls	None
Interested in Objects	2.96 [*]	Boys	Boys	None
More Influenced by Biology	3.86	None	Girls	None
More Influenced by Environment	4.02	None	Boys	None
Lack Confidence	3.71	None	Girls	Girls ^{**}
Competitive	3.14 [*]	Boys	Boys	Boys
Impulsive	3.21 [*]	Boys	Boys	None/Boys ^{***}
Empathetic	4.83 [*]	Girls	Girls	None
Show Off	2.76 [*]	Boys	Boys	Boys
Concerned With Physical Appearance	4.94 [*]	Girls	Girls	Girls
Physically Active	3.19 [*]	Boys	Boys	Boys
Fearful or Timid	4.60 [*]	Girls	Girls	Girls ^{**}
Anxious	4.13 [*]	None	Girls	Girls ^{**}
Sensitive to Social Cues	4.89 [*]	Girls	Girls	None/Girls ^{****}
Helpful	4.67 [*]	Girls	Girls	None
Aggressive	2.93 [*]	Boys	Boys	Boys
Susceptible to Peer Pressure	4.15	None	Girls	None
Concerned About Conforming to Gender Norms	4.03	None	Boys	Boys

^{*}Note. Teachers differed significantly from the central value of 4 on these items, as determined by t-tests.

^{**}Note. Although girls appear less confident and more timid, fearful, and anxious than boys in a variety of studies, it should be noted that research in these characteristics typically asks children to rate themselves, and at all ages females tend to be more "modest" about their abilities and more willing to acknowledge emotions that signify weakness.

^{***}Note. These characteristics showed sex differences at some ages but not at others. Boys are more impulsive than girls in preschool but not at older ages.

^{****}Note. Maccoby and Jacklin concluded that sensitivity to social cues did not differ across the sexes, however, more recent research has continued to support the notion that females have a slight advantage over males in deciphering nonverbal cues.

Table 3: Results of Significant and Near-Significant T-tests That Document Differences in Male and Female Teachers' Responses

Item	Male Teachers' Mean	Advantaged Gender (male teachers)	Female Teachers' Mean	Advantaged Gender (female teachers)	$p <$
Visual Learners	3.49	Boys	3.87	None	0.046
Good Fact Memory	4.22	None	3.86	None	0.045
Good Quantitative Skills	4.12	None	3.66	Boys	0.002
More Influenced by Biology	4.14	None	3.79	None	0.050
Competitive	2.57	Boys	3.23	Boys	0.001
Helpful	4.95	Girls	4.60	None	0.052